

## Assessment of Health Seeking Behaviour of Type II Diabetes Patients Attending Tertiary care Centre at Mysuru: A Concern and Call for Action

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#### Abstract

*Background:* Diabetes Mellitus is a multisystem disorder that is associated with number of complications. Patient's awareness and practices are crucial components in reducing the burden of diseases and its complications. Health-care seeking behaviour is important as it determines acceptance of health care and outcomes of chronic conditions but it has been investigated to a limited extent in the developing countries. *Objectives:* 1) To Assess the Health Seeking Behaviour of Type II Diabetes Patients 2) To Assess the factors Influencing the Health Seeking Behaviour. *Materials and Methodology:* A Cross-sectional study of 200 Type II Diabetic Patients at JSS Hospital, Mysuru was conducted, Assessment of Health Seeking Behaviour using semistructured questionnaire was done. Descriptive statistics like proportion and Inferential statistics like chi-square test was done. *Results:* Among 200 study participants 53.5% of study subjects belongs to age group 41-60 yrs, 57.5% were males, 67.5% belongs to lower socio-economic class according to BG Prasad classification, 85% were married, 51% were Obese, 44.5% were having family history of Diabetes, 48% were having Hypertension, 68.5% were on oral hypoglycemic agents, 10.5% were on Insulin, 20.5% were on both oral hypoglycaemic agents and Insulin. 163 (81.5%) were anxious when they were diagnosed to have Diabetes, 123 (61.5%) were influenced by themselves to go for investigations, 68 (34%) were influenced by Doctors to visit hospital, 131 (65.5%) had no money as the barrier to attend hospital for check-up, 186 (93%) visit hospital once in less than 3 months, 180 (90%) of them believed oral drugs are the treatment for Diabetes, 188 (94%) prefer Allopathic medicine. *Conclusion:* Health seeking behaviour is the important factor which influence on the glycaemic status of Diabetes Mellitus Patients, Improving the Knowledge about disease and management plays a very important role in reducing the burden of complications.

**Keywords:** Diabetes Mellitus; Glycaemic Status; Health Seeking Behaviour.

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#### Introduction

Diabetes is a chronic condition affecting millions of people worldwide and it is the fourth leading

cause of death in India. Diabetes is a silent disease-many sufferers become aware that they have diabetes only when they develop one of its life threatening complications. Once diabetes develops, it is a costly disease to manage because of its chronic nature and severity of complications.

Diabetes is fast gaining the status of a potential epidemic in India with more than 62 million diabetic individuals currently diagnosed with the disease [1].

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Type II diabetes mellitus (TIIDM) is the most common form of diabetes constituting 90% of the diabetic population. The number of patients with diabetes in India is currently around 40.9 million and is expected to rise to 101 million by 2030 [2].

It is well established that its prevalence increases globally especially in the developed countries and this increased prevalence is associated with deleterious changes in lifestyle, unhealthy eating practices and reduced physical activity [3].

Diabetes self-management is essential for diabetes control. Yet little is known about patient preferences for sources of health information or about the extent to which information is sought directly or received passively through various media sources.

Many are unaware of the disease and the healthcare system receives people at the hospitals with DM at very late stages - when they have unknowingly had the disease for years. Therefore, the number of people with diabetes registered in hospitals is not an indicator of the real disease burden in the community [4].

The problem of diabetes management in developing country is characterised by late and poor clinic attendance, delayed diagnosis and poor quality care.

The disease is little understood in the general population and is often poorly detected and go unnoticed, which leads to complications and bad impact on quality of life in diabetics, So by knowing the factors behind the poor health seeking behaviour and delay in approaching the doctors and working on it will change the behaviour of diabetics towards their health and helps to improve the quality of life of diabetics

Limited information has been found about healthcare seeking behaviour among patients with Diabetes Mellitus and none focusing primarily on developing countries.

The present study aims at assessing the Health Seeking behaviour of Diabetes Patient attending

Tertiary care Hospital at Mysore.

## Materials and Methodology

This was a Cross-Sectional study conducted in Department of Medicine and Community Medicine, JSS Medicine Mysuru during the period January to December 2015. In the diabetic clinic of JSS hospital Mysore there were 2000 diabetic patients registered, who come for regular check-up and follow up.

Study was done including Duration of Diabetes for more than 1 year and registered type II Diabetes Mellitus patients. Excluding Gestational Diabetes and those who was not able to communicate due to physical or mental disability.

Taking the prevalence of diabetes, which was 12.1% in urban area of India with 5% allowable error [5] and Including nonresponse rate of 20%, It was calculated to interview 200 subjects of type II diabetic patients. By taking all the consecutive diabetic subjects who attended JSS hospital for the first time in the study period till the sample size was reached.

*Institutional Ethics Committee approval was obtained and Individual consent from study subjects was taken.*

### *Methods of collection of data:*

Information regarding socio-demographic characteristics like gender, education, occupation and Health Seeking Behaviour was collected using a pretested proforma by interview technique.

Glycaemic status of Type II diabetic patient was assessed taking HbA1C as criteria.

For comparing Health seeking behaviour between controlled and uncontrolled diabetic status glycaemic index was used. (HbA1C >7 - uncontrolled, HbA1C <7 - controlled)[6].

### *Statistical Analysis*

Data thus Obtained was coded and entered into Microsoft excel Work sheet. This was analysed using SPSS 22 version.

Analysis done by using descriptive statistics like frequency distribution of the study subjects according to age, sex, marital status, educational status, employment, type of occupation and Socioeconomic status, Controlled and Uncontrolled status of Diabetes, First symptoms perceived at the time of diagnosis and Health Seeking Behaviour.

To find out the association of Health seeking behaviour with above factors, chi-square test was applied for each factor. The statistical significance was evaluated at 5% level of significance.

## Results

The study was conducted on 200 type II Diabetes Mellitus patients attending diabetic clinic in JSS Hospital Mysuru.

Out of 200 subjects most of them, that is 53.5% belongs to age group 41-60 years and 39.5% belongs

to 61-80 years. 57.5% were males and 42.0% were Females 47.5% were Non-literate, 16.5% studied till High school and 5.5% were graduates. majority of them around 57.5% were Unemployed which includes Housewife, retired and those who are not working, 26.5% were semiskilled workers and 12.5% were unskilled workers and 1% were professionals. Majority 67.5% belongs to Lower

Socio-economic Status and 24.5% belongs to Lower middle Socio-economic status according BG Prasad Scale of Socio Economic Status classification. 85% were married and 13% were widow (Table 1).

Out of 200 subjects, majority 102 (51%) were obese, 50 (25%) were having Normal BMI, 43 (21.5%) were overweight and 5 (2.5%) were underweight (Table 2).

**Table 1:** Distribution study subjects based on Socio-demographic characteristics.

Determinants	Frequency	Percentage (%)
<i>Age</i>		
20-40	10	5.0
41-60	107	53.5
61-80	79	39.5
81 & above	4	2.0
<i>Gender</i>		
Female	115	57.5
Male	84	42.5
<i>Education</i>		
Non literate	95	47.5
Primary school	24	12.0
Middle school	27	13.5
High school	33	16.5
Intermediate	10	5.0
Graduate	11	5.5
<i>Occupation</i>		
Unemployment	115	57.5
Unskilled	25	12.5
Semiskilled	53	26.5
Skilled	2	1.0
Semi professional	3	1.5
Professional	2	1.0
<i>Socioeconomic status</i>		
Upper	1	0.5
Upper middle	4	2.0
Middle	11	5.5
Lower middle	49	24.5
Lower	135	67.5
<i>Marital status</i>		
Married	170	85.0
Widow	26	13.0
Single	4	2.0
Total	200	100

**Table 2:** Distribution of Study subjects based on BMI

BMI Grade	Frequency	Percentage (%)
Underweight	5	2.5
Normal	50	25.0
Overweight	43	21.5
Obese	102	51.0
Total	200	100.0

*Diabetic Profile and associated Co-morbidities*

Out of 200 subjects, 44.5% were having Family History of Diabetes and 48% were Hypertensive. (Table 3 & 4) 59% were having uncontrolled status of Diabetes (HBA1c >7) and 41% were having controlled status of Diabetes. (HBA1c <7). (Table 5)

Out of 200 subjects 68.5% were on Oral Hypoglycemic agents, 10.5% were on Insulin, 20.5% were on both. (Table 6)

Only 13% had classical symptoms of diabetes like generalised weakness, polyuria and polydipsia, 30% had generalised weakness before diagnosis of Diabetes, 15% had polyuria and 12.5% didn't had any symptoms got diagnosed during pre-operative check-up and regular checkup. (Table 7)

*Health Seeking Behaviour*

Out of 200 subjects in our study, 164(82%) were anxious when they were diagnosed to have Diabetes, 36(18%) were normal and only one was depressed.

It is observed that out of 200 subjects in our study, 123(61.5%) were influenced by self, 68(34%) were influenced by Doctors and 9(4.5%) were influenced by friends for decision making.

It is Observed from the table that out of 200 subjects 131 (65.5%) had Money has the barrier to attend hospital for check-up, 49 (24.5%) had Distance has barrier and for 20 (10%) family support was the barrier.

**Table 3:** Distribution of study subjects based on Family history of Diabetes

Family history of diabetes	Frequency	Percentage
Yes	89	44.5%
No	111	55.5%
Total	200	100%

**Table 4:** Distribution of Study subjects based on Presence of Co-morbidities like Hypertension.

Hypertension	Frequency	Percentage
Yes	96	48%
No	104	52%
Total	200	100%

**Table 5:** Distribution of Study subjects based on symptoms during Diagnosis.

Symptoms	Frequency	Percentage
Generalised weakness	60	30.0
Polyuria	30	15.0
Polydipsia	6	3.0
Non healing wound	12	6.0
By self	9	4.5
Pre-operative investigation	16	8.0
Headache	7	3.5
Fever	19	9.5
Blurring of Vision	4	2.0
Burning foot	6	3.0
Pedal edema	4	2.0
GDM	1	0.5
Generalised weakness, Polyuria & polydipsia	26	13.0
Total	200	100.0

**Table 6:** Distribution of Study subjects based on Glycaemic status.

Diabetes status	Frequency	Percentage (%)
Controlled	82	41.0
Uncontrolled	118	59.0
Total	200	100.0

**Table 7:** Distribution of Study subjects based on Type of Anti-Diabetic Medication.

Medication	Frequency	Percentage (%)
Oral	137	68.5
Insulin	21	10.5
Both	41	20.5
Diet	1	0.5
Total	200	100.0

**Table 8:** Distribution of study subjects based on Health seeking behaviour

Health seeking behaviour	Controlled	Uncontrolled	Total (%)	Chi-square value	p-value
Initial response on Diagnosis					
Anxious & depressed	60	104	164(82.0)	7.89	0.01
Normal	22	14	36(18)		
Influence on seeking health care					
Friends	6	3	9(4.5)	2.92	0.23
Doctors	29	39	68(34)		
By self	47	76	123(61.5)		
Barriers					
Money	49	82	131(65.5)	2.75	0.25
Distance	25	24	49(24.5)		
Family Support	8	12	20(10)		
Interval of health check-ups					
≤3months	79	107	186(93)	4.84	0.09
>3 months	5	9	14(7)		
Perception on treatment					
Oral	75	105	180(90)	1.49	0.48
Insulin	5	6	11(5.5)		
Diet	5	5	9(4.5)		
Preferred system of Medicine					
Ayurvedic	5	7	12(6)	0.002	0.961
Allopathy	77	111	188(94)		
Total			200(100)		

Out of 200 subjects in our study 186 (93%) visit hospital once in less than 3 months for check-up and investigation, and 14 (7%) go for check-up more than 3 months once.

Out 200 subjects 180 (90%) of them believed oral drugs is the treatment for Diabetes, 11 (5.5)% believed insulin is the treatment for Diabetes and 9 (4.5%) of them believed Diet modification is the treatment choice.

Out of 200 subjects in our study majority 188 (94%) prefer Allopathic medicine and only

On applying chi-square test to study Association between Health seeking behaviour and glycaemic status, It was observed that association between initial response to get diagnosed to have Diabetes Mellitus with controlled and uncontrolled glycaemic status showed statistical significant results. (p value -0.01) (Table 8)

## Discussion

Understanding the Health seeking behaviour of patients gives the idea of individual perception of disease, knowledge about the disease, their beliefs, attitude, practice and barriers to seek medical care.

By understanding these factors, it helps the care provider to overcome these barriers and fills the gap between care giver and care receiver and elps in giving better quality care to the population.

Out of 200 subjects in our study, 163 (81.5%) were anxious when they were diagnosed as Diabetics, 36 (18%) were normal and only one was depressed.

Association of subjects initial response to diagnosis with controlled and uncontrolled glycaemic status showed statistical significance (p=0.01) The reason for becoming anxious may be

due to chronic nature of diabetes, the type of diet to be followed once they get diagnosed to have the disease and also they fear for its complications.

It is observed that out of 200 subjects, 131(65.5) had money as the barrier to attend hospital for check-up, 49 (24.5%) of study subjects had distance as the barrier and 20 (10%) had family support as the barrier.

It is observed that out of 200 subjects 186(93%) visited the hospital for follow-up once in less than 3 months and 14 (7%) were visiting hospital at interval of more than 3 months once.

The reason for frequent visits to health care may be due to accessibility and availability of services.

It is also observed that out of 200 subjects 180 (90%) of them believed that oral drugs is the treatment for Diabetes, 11 (5.5)% believed insulin is the treatment and 9 (4.5%) of them believed Diet modification is the treatment choice.

Study done in Tanzania by Avi B et al. (2012) reported 14.9% of the diabetic patients were not taking any treatment at the time of interview and most common reasons for not taking treatment were lack of money and long waiting hours and queues apart from a distance of health facility from the residence [7].

Another study done by Mehrotra et al reported poor availability of transport, physical distance to the health facility and the time taken to reach such facilities have been found to influence health-seeking behaviour and health service utilization [4].

Study done in Tanzania by Avi B et al. observed that many patients could not attend their regular clinic appointments due to lack of financial resources to pay for public transport. Additionally health care coverage is another major factor influencing timely accessibility to care and treatment for diabetes in sub-Saharan Africa [7].

In the study conducted in Tanzania Avi B et al. more than 50 percent of people with type II diabetes are reported not to be aware of having the disease and about the treatment of diabetes [7].

This type of situations leads to late care seeking with consequent complications in the care and management of diabetes. Given the chronic nature of diabetes, patients knowledge and skills in its management become essential.

Our study reported 6% were using Ayurvedic medicine along with Allopathy, whereas study carried out by Mehrotra *et al.* in Allahabad, India, which showed that 67.8% of patients were using

the alternative system of medicine apart from allopathic system of medicine [8].

People get influenced by friends, neighbours and the media and go for alternative system of medicine for better control of glycaemic status. There is also misbelief in the community that traditional healing methods will cure the disease.

Uncontrolled glycaemic status makes them to feel that allopathic medicine is not sufficient or it is not the right choice and get influenced by other system of medicine either as supplement with Allopathic system or replacing it with other systems of Medicine like Ayurvedic or Homeopathic Medicines.

Health seeking behaviour is the important determinant of health status of Diabetes, There are very few studies done on these factors which has major impact on individual health. Therefore lack of appropriate health facilities is the most important factor which has significant impact on health behaviour.

Financial status, transport facilities and the patient's income were other factors effective on health behaviour. Much research should be done on these areas and identify the lacunae and provide appropriate intervention which is acceptable to the population.

#### *Limitations*

The study was conducted in Hospital, a longitudinal study involving larger population in community should be conducted to generalize the results.

#### *Recommendations*

Improving the Knowledge regarding diabetes mellitus and its management, addressing the barriers for health seeking will improve the Disease status. Specific efforts should be made to improve awareness of Complications of Diabetes to the Patients and Impact of Uncontrolled glycaemic status.

#### **Conclusion**

It was observed from the study that Health seeking behaviour is the important factor which influence on the glycaemic status of Diabetes Mellitus Patients, Improving the Knowledge about disease and management plays a very important role in reducing the burden of complications.

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